

# Hermit crabs associated with the bryozoan *Hippoporidra* in British waters

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The cheilostome bryozoan *Hippoporidra lusitania* is not associated exclusively with the hermit crab *Pagurus cuanensis* as some previous reports have implied. It has been found with two other species of pagurid, *Anapagurus chiroacanthus* and *Cestopagurus timidus*; its occurrence with *P. cuanensis* requires confirmation.

Species of the cheilostome bryozoan genus *Hippoporidra* preferentially or exclusively encrust gastropod shells inhabited by hermit crabs (Crustacea: Anomura: Paguroidea). Helicospiral growth of an established bryozoan colony may extend the crab's domicile well beyond the aperture of the original gastropod shell (Taylor & Cook, 1981). The type-species of the genus, *Hippoporidra edax* (Busk), was first described as a fossil from the Coralline Crag (Pliocene) of eastern England, but the name has subsequently been used for living specimens from both sides of the North Atlantic. However, material from Recent British seas that had formerly been referred to *H. edax* was distinguished as a new species, *H. lusitania*, by Taylor & Cook (1981).

No details were given by Taylor & Cook (1981) of the hermit crabs with which *H. lusitania* occurs. A few earlier records of Recent *Hippoporidra edax* from Britain, which may be assumed to refer to *H. lusitania*, mentioned *Pagurus cuanensis* Bell as the associated pagurid. Thus, Moore (1937) reported a single colony of the bryozoan with *P. cuanensis* collected off the Isle of Man. This record was repeated by Bruce *et al.* (1963) and quoted by Cook (1964). Eggleston (1972) reported that in Manx waters *Hippoporidra* was in fact restricted to *P. cuanensis*, and this apparent example of extreme stenotopy in a bryozoan was quoted by Ryland (1976). Hayward & Ryland (1979) gave *P. cuanensis* as the preferred species of British *Hippoporidra*, and did not name any other pagurid with which the bryozoan was found.

The Bryozoa collection of the Zoology Department of the British Museum (Natural History) contains 21 colonies of *H. lusitania*, including the type series from Guernsey and part of the Manx material studied by Eggleston. The associated hermit crab is present in only four examples, as detailed in Table 1.

It is clear from this that *H. lusitania* is not restricted to *Pagurus cuanensis*, even off the Isle of Man. Indeed, its occurrence with *P. cuanensis* at all requires confirmation. *P. cuanensis* reaches a considerably larger size than either *Anapagurus chiroacanthus* (Lilljeborg) or *Cestopagurus timidus*

Table 1

Specimen			H	W	Hermit crab
Isle of Man	D. Eggleston	1963.12.30.1	11.0	11.5	<i>Anapagurus chiroacanthus</i>
Guernsey	A. M. Norman	1911.10.1.1143H	12.0	10.0	<i>Anapagurus chiroacanthus</i>
Guernsey	A. M. Norman	1911.10.1.1143I (Paratype)	8.5	8.5	<i>Anapagurus</i> sp. (fragment)
Scilly Isles	M. H. Thurston	1965.8.18.26	7.5	4.5	<i>Cestopagurus timidus</i>

H = approximate height of gastropod/bryozoan measured along axis, in mm.

W = approximate 'body whorl' diameter of gastropod/bryozoan, in mm.

(Roux), the carapace lengths given by Bouvier (1940) being 8–12 mm, 4–6 mm and 4–5 mm respectively. All *H. lusitania* colonies available for study at the BM(NH) are relatively small; the largest (Plymouth, T. Hincks, 1899.5.1.1517) has a height of c. 17 mm and a 'body whorl' diameter of c. 14 mm. It therefore seems probable from the limited material available that *Hippoporidra lusitania* may be most commonly associated with relatively small hermit crabs.

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